TSG-RAN Meeting #14
Kyoto, Japan, 11 - 14 December 2001

RP-010760

Title: **Agreed CRs (Release '99 and Rel-4 category A) to TS 25.321**

Source: **TSG-RAN WG2**

Agenda item: **8.2.3**

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio
R2-012576	agreed	25.321	090	2	R99	Cautionary Note for Interfrequency Measurements in Cell-FACH	F	3.9.0	3.10.0
R2-012577	agreed	25.321	091	1	Rel-4	Cautionary Note for Interfrequency Measurements in Cell-FACH	A	4.2.0	4.3.0
R2-012480	agreed	25.321	094		R99	Correction on Control of RACH Transmissions	F	3.9.0	3.10.0
R2-012645	agreed	25.321	095		Rel-4	Correction on Control of RACH Transmissions	A	4.2.0	4.3.0
R2-012646	agreed	25.321	096	1	R99	Correction on Traffic Volume Control	F	3.9.0	3.10.0
R2-012647	agreed	25.321	097		Rel-4	Correction on Traffic Volume Control	A	4.2.0	4.3.0
R2-012509	agreed	25.321	098		R99	General correction on Access Service Class selection	F	3.9.0	3.10.0
R2-012648	agreed	25.321	099		Rel-4	General correction on Access Service Class selection	A	4.2.0	4.3.0
R2-012664	agreed	25.321	100		R99	TFC selection in compressed mode	F	3.9.0	3.10.0
R2-012757	agreed	25.321	101		Rel-4	TFC selection in compressed mode	A	4.2.0	4.3.0

3GPP TSG-RAN WG2 Meeting #25
Makuhari, Japan, 26 - 30 November, 2001

R2-012576

CR-Form-v4

CHANGE REQUEST

⌘ **25.321** **CR** **090** ⌘ ev **r2** ⌘ Current version: **3.9.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Cautionary note for Inter-frequency Measurements in Cell FACH state
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	21 November 2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	At RAN2#22 in Berlin, RAN2 discussed R2-011642 which described the possible conflict of UL transmissions in Cell-FACH state with the inter-frequency measurements scheduled during FACH measurement occasions. It was agreed to add a warning note in the RAN2 specifications. This CR provides such notes for TS25.321.
Summary of change:	⌘	Notes are added to procedures referencing control of UL transmission in Cell FACH state.
Consequences if not approved:	⌘	UEs may not coordinate UL transmission and measurement schedules and may degrade cell reselection performance.

Clauses affected:	⌘	11.2.2, 11.3		
Other specs affected:	⌘	☒ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.321 v4.1.0, CR 091r1
Other comments:	⌘			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification

11.2.2 Control of RACH transmissions for FDD mode

The RACH transmissions are controlled by the UE MAC sublayer as outlined in figure 11.2.2.1.

NOTE: The figure shall illustrate the operation of the transmission control procedure as specified below. It shall not impose restrictions on implementation. MAC controls the timing of each initial preamble ramping cycle as well as successive preamble ramping cycles in case that none or a negative acknowledgement is received on AICH.

NOTE: In Cell-FACH state, the UE should co-ordinate the UL transmission schedule with the measurement schedule in FACH measurement occasions so as to minimise any delays associated with inter-frequency measurements.

MAC receives the following RACH transmission control parameters from RRC with the CMAC-CONFIG-Req primitive:

- a set of Access Service Class (ASC) parameters, which includes for each ASC, i=0,…,NumASC an identification of a PRACH partition and a persistence value P_i (transmission probability);
- maximum number of preamble ramping cycles M_{max};
- range of backoff interval for timer $T_{BO1,}$ given in terms of numbers of transmission 10 ms time intervals N_{BO1max} and N_{BO1min}, applicable when negative acknowledgement on AICH is received.

When there is data to be transmitted, MAC selects the ASC from the available set of ASCs, which consists of an identifier *i* of a certain PRACH partition and an associated persistence value P_i. The procedure to be applied for ASC selection is described in subclause 11.2.1.

Based on the persistence value P_i, the UE decides whether to start the L1 PRACH transmission procedure (see [13]) in the present transmission time interval or not. If transmission is allowed, the PRACH transmission procedure (starting with a preamble power ramping cycle) is initiated by sending of a PHY-ACCESS-REQ primitive. MAC then waits for access information from L1 via PHY-ACCESS-CNF primitive. If transmission is not allowed, a new persistency check is performed in the next transmission time interval. The persistency check is repeated until transmission is permitted.

When the preamble has been acknowledged on AICH, L1 access information with parameter value "ready for data transmission" is indicated to MAC with PHY-ACCESS-CNF primitive. Then data transmission is requested with PHY-DATA-REQ primitive, and the PRACH transmission procedure shall be completed with transmission of the PRACH message part according to L1 specifications. Successful completion (TX status) of the MAC transmission control procedure shall be indicated to higher layer.

When PHY indicates that no acknowledgement on AICH is received while the maximum number of preamble retransmissions is reached (defined by parameter Preamble_Retrans_Max on L1), a new persistency test is performed in the next transmission time interval. The timer T_2 ensures that two successive persistency tests are separated by at least one 10 ms time interval.

In case that a negative acknowledgement has been received on AICH a backoff timer T_{BO1} is started. After expiry of the timer, persistence check is performed again. Backoff timer T_{BO1} is set to an integer number N_{BO1} of 10 ms time intervals, randomly drawn within an interval $0 \le N_{BO1min} \le N_{BO1} \le N_{BO1max}$ (with uniform distribution). N_{BO1min} and N_{BO1max} may be set equal when a fixed delay is desired, and even to zero when no delay other than the one due to persistency is desired.

Before a persistency test is performed it shall be checked whether any new RACH transmission control parameters have been received from RRC with CMAC-CONFIG-Req primitive. The latest set of RACH transmission control parameters shall be applied.

If the maximum number of preamble ramping cycles M_{max} is exceeded, failure of RACH transmission shall be reported to higher layer.

Both, transmission failure and successful completion of the MAC transmission control procedure, shall be indicated individually for each logical channel of which data was included in the transport block set of that access attempt. When transparent mode RLC is employed (i.e. for CCCH), transmission status is reported to RRC with CMAC-STATUS-Ind

primitive. For logical channels employing acknowledged or unacknowledged mode RLC, transmission status is reported to RLC with MAC-STATUS-Ind primitive.

11.3 Control of CPCH transmissions for FDD

The MAC layer controls the timing of CPCH transmissions on transmission time interval level (i.e. on 10, 20, 40 or 80 ms level); the timing on access slot level is controlled by L1. MAC controls the timing of each initial preamble ramping cycle as well as successive preamble ramping cycles. Note that retransmissions in case of erroneously received CPCH message part are under control of higher layers. The CPCH transmissions are performed by the UE as illustrated in figures 11.3.1 and 11.3.2. Figure 11.3.1 procedure is used for access to CPCH channel. Figure 11.3.2 procedure is used for CPCH Message transmission on the CPCH channel obtained using the access procedure.

NOTE: In Cell-FACH state, the UE should co-ordinate the UL transmission schedule with the measurement schedule in FACH measurement occasions so as to minimise any delays associated with inter-frequency measurements.

MAC receives the following CPCH transmission control parameters from RRC with the CMAC-Config-REQ primitive:

- persistence values, P (transmission probability for each Transport Format (TF));
- N_access_fails, maximum number of preamble ramping cycles;
- NF_max, maximum number of frames for CPCH transmission for each TF;
- N_EOT (Number of EOT for release of CPCH transmission);
- Backoff control timer parameters;
- Transport Format Set;
- Initial Priority Delays;
- Channel Assignment Active indication.

The MAC procedure for CPCH access shall be invoked when the UE has data to transmit. The steps for this procedure are listed here:

1. the UE shall get all UL transmit parameters (CPCH Set Info, P values, Initial Priority Delays, N_access_fails, NF_max, N_EOT etc) from RRC;
2. the UE shall reset counter M, EOT counter and Frame Count Transmitted (FCT) upon entry to the initial access procedure;
3. if counter M is equal to N_access_fails, the UE shall indicate an access failure error to higher layer and the CPCH access procedure ends. Access failure is reported to RLC with MAC-STATUS-Ind primitive individually for each logical channel of which data was included in the transport block set that could not be transmitted. If counter M is less than N_access_fails, the UE shall send a PHY-CPCH_Status-REQ to Layer 1 to obtain CPCH TF subset status. If Layer 1 returns an error message, the UE shall increment counter M and the procedure shall continue from step 3. If Layer 1 returns a PHY-CPCH_Status-CNF message, which includes a TF subset indicating the currently available TFs of the requested TF subset, the procedure shall continue from step 4;
4. the UE shall initialise the Busy Table with the CPCH TF subset status from Layer 1. Those TFs in the TF subset of the Layer 1 PHY-CPCH_Status-CNF response will be marked available. All other TFs will be marked busy;
5. if all TFs are not marked busy, the procedure shall proceed from step 6. If all TFs are marked busy, the UE shall reset and start timer Tboc1, wait until timer expiry, and increment counter M. The procedure shall continue from step 3;
6. the UE shall update all UL transmit parameters from RRC;
7. UE shall select a TF from the set of available TFs listed in the Busy Table. UE shall use the CPCH channel capacity (transport block set size, NF_max, and TTI interval), and Busy Table information to select one CPCH TF for L1 to access. The UE may select a TF, which uses a lower data rate and a lower UL Tx power than the maximum UL Tx power allowed. UE shall implement a test based on the Persistence value (P) to determine

whether to attempt access to the selected CPCH TF. If access is allowed, the procedure shall continue from step 9. If the P test does not allow access, the procedure shall continue from step 8;

8. the selected CPCH TF shall be marked busy in the Busy Table. If all TFs are marked busy, the UE shall reset and start timer Tboc1, wait until timer expiry, increment counter M, and continue from step 3. If all TFs are not marked busy, the UE shall resume the procedure from step 6;

9. the UE may implement an initial delay based on ASC of the data to be transmitted, then shall send a PHY-Access-REQ with the selected TF to L1 for CPCH access. After the UE has sent the access request to L1 , L1 shall return a PHY-Access-CNF including one of five access indications to MAC as shown in figure 11.3.1. If the L1 access indication is that access is granted, then UE shall continue from step 14. For the cases of the other Layer 1 responses, the procedure shall continue from step 10, 11, or 12 respectively.

10. if L1 access indication is no AP-AICH received or no CD-AICH received, the UE shall reset and start timer Tboc3, wait until timer expiry, and increment counter M. The UE shall proceed from step 3;

11. if L1 access indication is AP-AICH_nak received, the UE shall reset and start timer Tboc2, wait until timer expiry. If Channel Assignment (CA) is active, the UE shall proceed from step 13. If Channel Assignment (CA) is not active, the procedure shall continue from step 8;

12. if L1 access indication is CD-AICH signature mismatch, the UE shall reset and start timer Tboc4, wait until timer expiry, and increment counter M. The procedure shall continue from step 3;

13. the UE shall increment counter M. The procedure shall continue from step 3.

14. the UE shall build a transport block set for the next TTI;

15. if the sum of the Frame Count Transmitted counter plus N_TTI (the number of frames in the next TTI) is greater than NF_max, the UE shall exit this procedure and start the MAC procedure for CPCH transmission of the first TTI. This shall release the CPCH channel in use and the UE will contend again for a new CPCH channel to continue transmission. If the sum of the Frame Count Transmitted counter plus N_TTI is less than or equal to NF_max, the UE shall send a PHY-Data-REQ with the transport block set to L1 to continue transmission on the CPCH channel which has previously been accessed;

16. if the L1 returns PHY-Status-IND indicating normal transmission, the procedure shall continue from step 17. If L1 returns PHY-Status-IND indicating abnormal situation the UE shall execute an abnormal situation handling procedure and the CPCH message transmission procedure ends. Reasons for abnormal situation may include the following:

    - emergency stop was received;
    - start of Message Indicator was not received;
    - L1 hardware failure has occurred;
    - out of synch has occurred;

17. the UE shall increment the Frame Count Transmitted (FCT) counter by N_TTI just transmitted and indicate TX Status "transmission successful" to RLC individually for each logical channel of which data was included in the transport block set. If the UE has more data to transmit, the procedure shall continue from step 14;

18. the UE shall build the next TTI with zero sized transport block set. If the sum of the Frame Count Transmitted counter plus N_TTI is less than or equal to NF_max and if the sum of the EOT counter plus N_TTI is less than or equal to N_EOT, the procedure shall continue from step 19. Otherwise, the procedure ends;

19. UE shall send a PHY-Data-REQ with zero sized transport block set to L1 to stop transmission on the CPCH channel which has previously been accessed, both the EOT and the FCT counters shall be incremented by N_TTI and the procedure shall continue from step 18.

Table 11.3: CPCH Backoff Delay Timer Values

Timer	Based on parameter	Fixed/random
T_{BOC1} (all Busy)	NF_bo_all_busy	Random
T_{BOC2} (channel Busy)	NS_bo_busy	Fixed
T_{BOC3} (no AICH)	NF_bo_no_aich	Fixed
T_{BOC4} (mismatch)	NF_bo_mismatch	Random

For $T_{BOC4,}$ UE shall randomly select a timer value at each execution of the timer. A uniform random draw shall be made to select an integer number of frames within the range [0, NF_bo_mismatch]. For $T_{BOC1,}$ UE would randomly select a timer value at each execution of the timer. A uniform random draw shall be made to select an integer number of frames within the range [0, NF_bo_all busy].

NOTE: Backoff parameter range and units are specified in [7], RRC Protocol Specification.

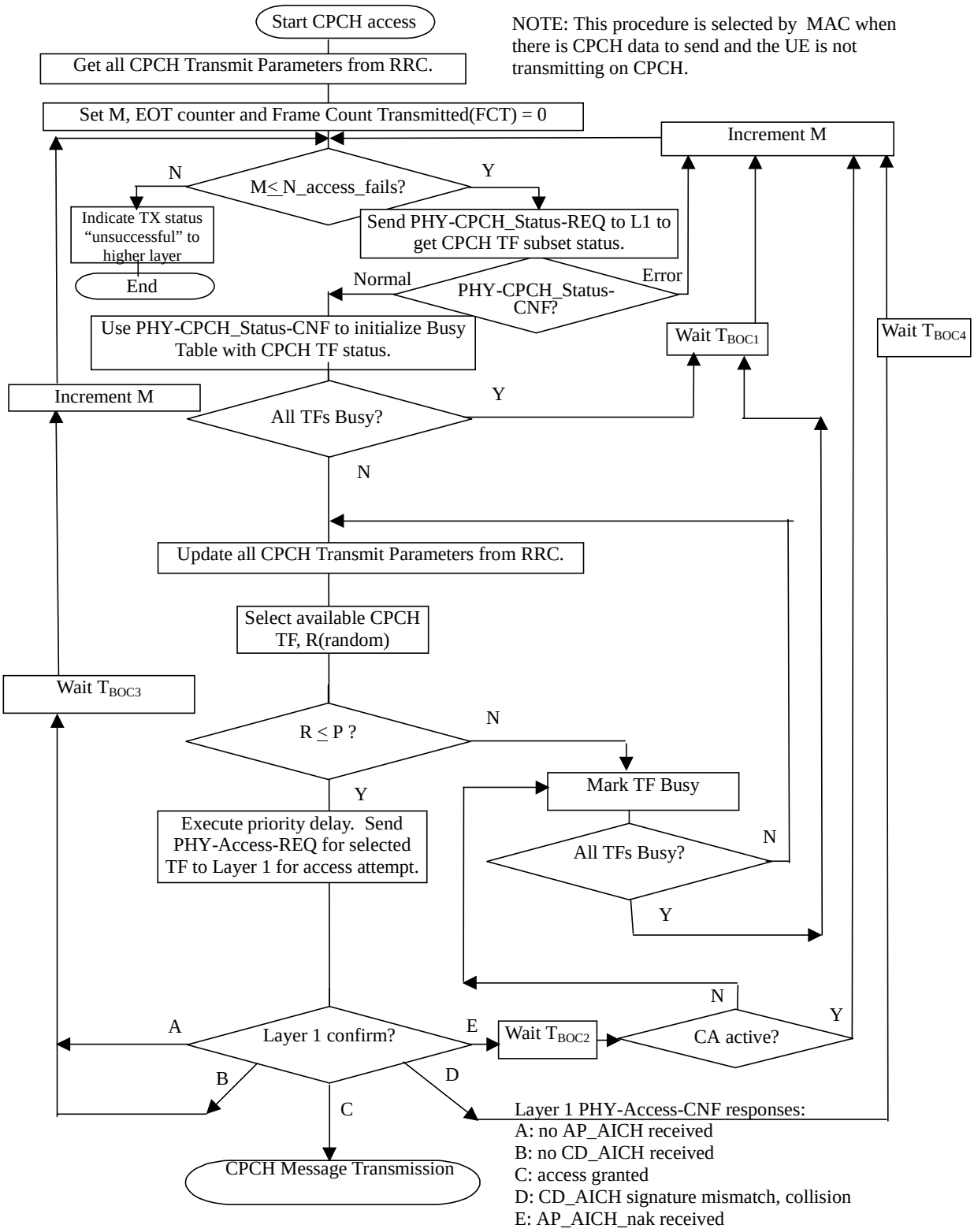

Figure 11.3.1: CPCH transmission control procedure for access (informative)

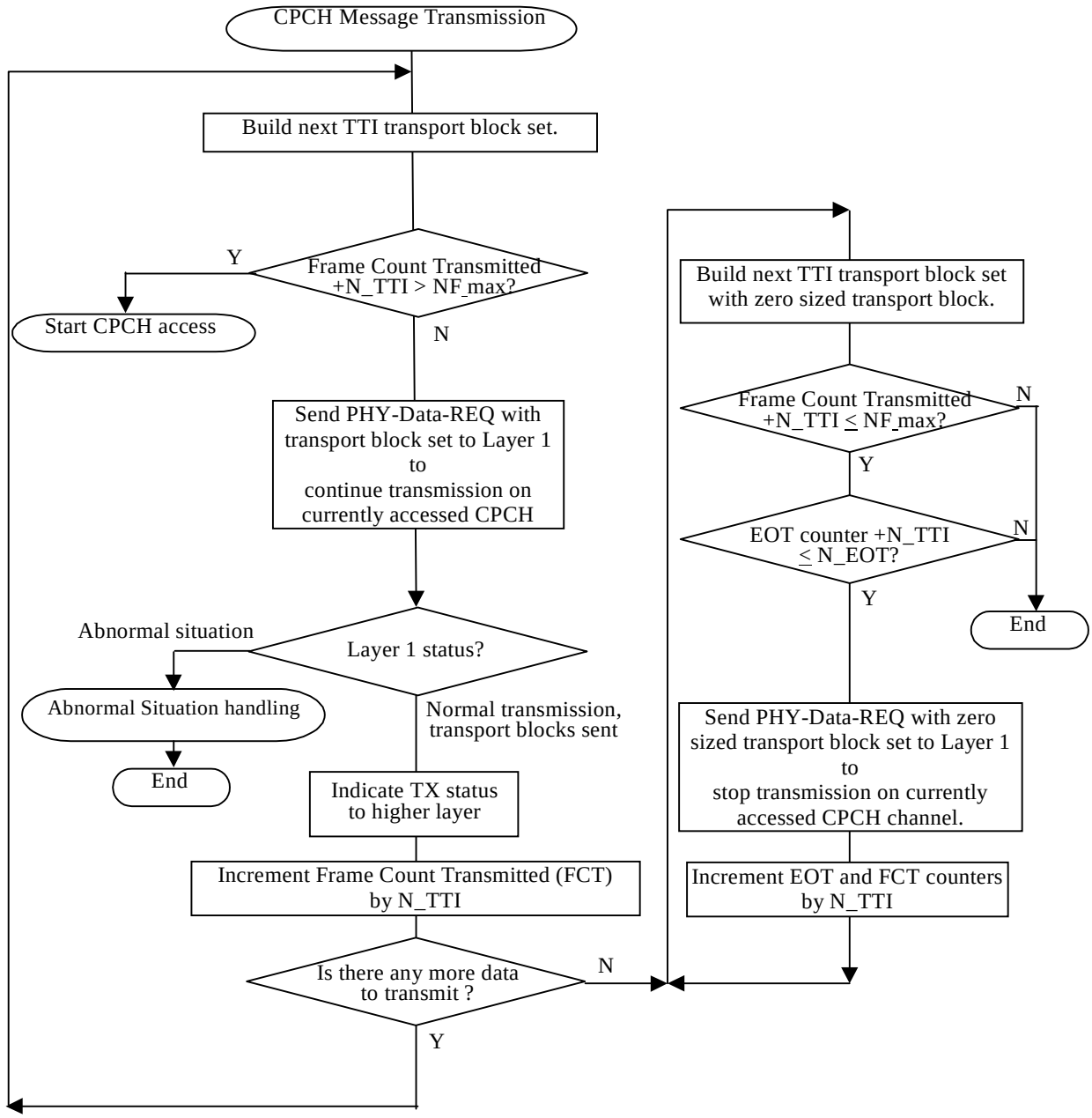

Figure 11.3.2: CPCH transmission control procedure for CPCH Message Transmission (informative)

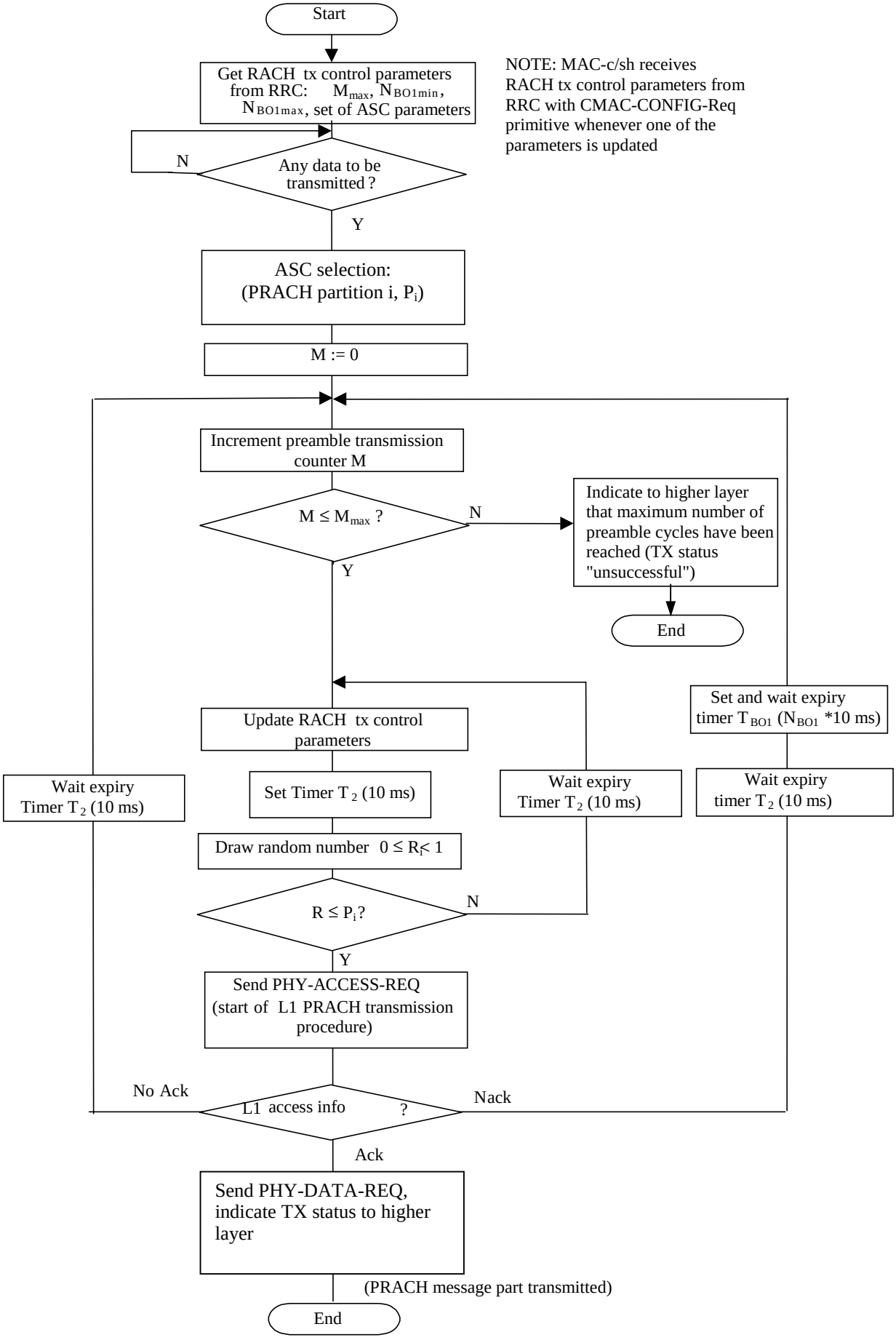

Figure 11.2.2.1: RACH transmission control procedure (UE side, informative)

3GPP TSG-RAN WG2 Meeting #25
Makuhari, Japan, 26 - 30 November, 2001

R2-012577

CR-Form-v4

CHANGE REQUEST

⌘ **25.321** **CR** **091** ⌘ ev **r1** ⌘ Current version: **4.2.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Cautionary note for Inter-frequency Measurements in Cell FACH state
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	21 November 2001
Category:	⌘	**A**
Release:	⌘	REL-4

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REL-5 *(Release 5)*

Reason for change:	⌘	At RAN2#22 in Berlin, RAN2 discussed R2-011642 which described the possible conflict of UL transmissions in Cell-FACH state with the inter-frequency measurements scheduled during FACH measurement occasions. It was agreed to add a warning note in the RAN2 specifications. This CR provides such notes for TS25.321.
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Consequences if not approved:	⌘	UEs may not coordinate UL transmission and measurement schedules and may degrade cell reselection performance.

Clauses affected:	⌘	11.2.2, 11.3		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.321 v3.8.0, CR 090r2
Other comments:	⌘			

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Before a persistency test is performed it shall be checked whether any new RACH transmission control parameters have been received from RRC with CMAC-CONFIG-Req primitive. The latest set of RACH transmission control parameters shall be applied.

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Both, transmission failure and successful completion of the MAC transmission control procedure, shall be indicated individually for each logical channel of which data was included in the transport block set of that access attempt. When transparent mode RLC is employed (i.e. for CCCH), transmission status is reported to RRC with CMAC-STATUS-Ind

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11.3 Control of CPCH transmissions for FDD

The MAC layer controls the timing of CPCH transmissions on transmission time interval level (i.e. on 10, 20, 40 or 80 ms level); the timing on access slot level is controlled by L1. MAC controls the timing of each initial preamble ramping cycle as well as successive preamble ramping cycles. Note that retransmissions in case of erroneously received CPCH message part are under control of higher layers. The CPCH transmissions are performed by the UE as illustrated in figures 11.3.1 and 11.3.2. Figure 11.3.1 procedure is used for access to CPCH channel. Figure 11.3.2 procedure is used for CPCH Message transmission on the CPCH channel obtained using the access procedure.

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- N_access_fails, maximum number of preamble ramping cycles;
- NF_max, maximum number of frames for CPCH transmission for each TF;
- N_EOT (Number of EOT for release of CPCH transmission);
- Backoff control timer parameters;
- Transport Format Set;
- Initial Priority Delays;
- Channel Assignment Active indication.

The MAC procedure for CPCH access shall be invoked when the UE has data to transmit. The steps for this procedure are listed here:

1. the UE shall get all UL transmit parameters (CPCH Set Info, P values, Initial Priority Delays, N_access_fails, NF_max, N_EOT etc) from RRC;
2. the UE shall reset counter M, EOT counter and Frame Count Transmitted (FCT) upon entry to the initial access procedure;
3. if counter M is equal to N_access_fails, the UE shall indicate an access failure error to higher layer and the CPCH access procedure ends. Access failure is reported to RLC with MAC-STATUS-Ind primitive individually for each logical channel of which data was included in the transport block set that could not be transmitted. If counter M is less than N_access_fails, the UE shall send a PHY-CPCH_Status-REQ to Layer 1 to obtain CPCH TF subset status. If Layer 1 returns an error message, the UE shall increment counter M and the procedure shall continue from step 3. If Layer 1 returns a PHY-CPCH_Status-CNF message, which includes a TF subset indicating the currently available TFs of the requested TF subset, the procedure shall continue from step 4;
4. the UE shall initialise the Busy Table with the CPCH TF subset status from Layer 1. Those TFs in the TF subset of the Layer 1 PHY-CPCH_Status-CNF response will be marked available. All other TFs will be marked busy;
5. if all TFs are not marked busy, the procedure shall proceed from step 6. If all TFs are marked busy, the UE shall reset and start timer Tboc1, wait until timer expiry, and increment counter M. The procedure shall continue from step 3;
6. the UE shall update all UL transmit parameters from RRC;
7. UE shall select a TF from the set of available TFs listed in the Busy Table. UE shall use the CPCH channel capacity (transport block set size, NF_max, and TTI interval), and Busy Table information to select one CPCH TF for L1 to access. The UE may select a TF, which uses a lower data rate and a lower UL Tx power than the maximum UL Tx power allowed. UE shall implement a test based on the Persistence value (P) to determine

whether to attempt access to the selected CPCH TF. If access is allowed, the procedure shall continue from step 9. If the P test does not allow access, the procedure shall continue from step 8;

8. the selected CPCH TF shall be marked busy in the Busy Table. If all TFs are marked busy, the UE shall reset and start timer Tboc1, wait until timer expiry, increment counter M, and continue from step 3. If all TFs are not marked busy, the UE shall resume the procedure from step 6;

9. the UE may implement an initial delay based on ASC of the data to be transmitted, then shall send a PHY-Access-REQ with the selected TF to L1 for CPCH access. After the UE has sent the access request to L1 , L1 shall return a PHY-Access-CNF including one of five access indications to MAC as shown in figure 11.3.1. If the L1 access indication is that access is granted, then UE shall continue from step 14. For the cases of the other Layer 1 responses, the procedure shall continue from step 10, 11, or 12 respectively.

10. if L1 access indication is no AP-AICH received or no CD-AICH received, the UE shall reset and start timer Tboc3, wait until timer expiry, and increment counter M. The UE shall proceed from step 3;

11. if L1 access indication is AP-AICH_nak received, the UE shall reset and start timer Tboc2, wait until timer expiry. If Channel Assignment (CA) is active, the UE shall proceed from step 13. If Channel Assignment (CA) is not active, the procedure shall continue from step 8;

12. if L1 access indication is CD-AICH signature mismatch, the UE shall reset and start timer Tboc4, wait until timer expiry, and increment counter M. The procedure shall continue from step 3;

13. the UE shall increment counter M. The procedure shall continue from step 3.

14. the UE shall build a transport block set for the next TTI;

15. if the sum of the Frame Count Transmitted counter plus N_TTI (the number of frames in the next TTI) is greater than NF_max, the UE shall exit this procedure and start the MAC procedure for CPCH transmission of the first TTI. This shall release the CPCH channel in use and the UE will contend again for a new CPCH channel to continue transmission. If the sum of the Frame Count Transmitted counter plus N_TTI is less than or equal to NF_max, the UE shall send a PHY-Data-REQ with the transport block set to L1 to continue transmission on the CPCH channel which has previously been accessed;

16. if the L1 returns PHY-Status-IND indicating normal transmission, the procedure shall continue from step 17. If L1 returns PHY-Status-IND indicating abnormal situation the UE shall execute an abnormal situation handling procedure and the CPCH message transmission procedure ends. Reasons for abnormal situation may include the following:

    - emergency stop was received;
    - start of Message Indicator was not received;
    - L1 hardware failure has occurred;
    - out of synch has occurred;

17. the UE shall increment the Frame Count Transmitted (FCT) counter by N_TTI just transmitted and indicate TX Status "transmission successful" to RLC individually for each logical channel of which data was included in the transport block set. If the UE has more data to transmit, the procedure shall continue from step 14;

18. the UE shall build the next TTI with zero sized transport block set. If the sum of the Frame Count Transmitted counter plus N_TTI is less than or equal to NF_max and if the sum of the EOT counter plus N_TTI is less than or equal to N_EOT, the procedure shall continue from step 19. Otherwise, the procedure ends;

19. UE shall send a PHY-Data-REQ with zero sized transport block set to L1 to stop transmission on the CPCH channel which has previously been accessed, both the EOT and the FCT counters shall be incremented by N_TTI and the procedure shall continue from step 18.

Table 11.3: CPCH Backoff Delay Timer Values

Timer	Based on parameter	Fixed/random
T_{BOC1} (all Busy)	NF_bo_all_busy	Random
T_{BOC2} (channel Busy)	NS_bo_busy	Fixed
T_{BOC3} (no AICH)	NF_bo_no_aich	Fixed
T_{BOC4} (mismatch)	NF_bo_mismatch	Random

For $T_{BOC4,}$ UE shall randomly select a timer value at each execution of the timer. A uniform random draw shall be made to select an integer number of frames within the range [0, NF_bo_mismatch]. For $T_{BOC1,}$ UE would randomly select a timer value at each execution of the timer. A uniform random draw shall be made to select an integer number of frames within the range [0, NF_bo_all busy].

NOTE: Backoff parameter range and units are specified in [7], RRC Protocol Specification.

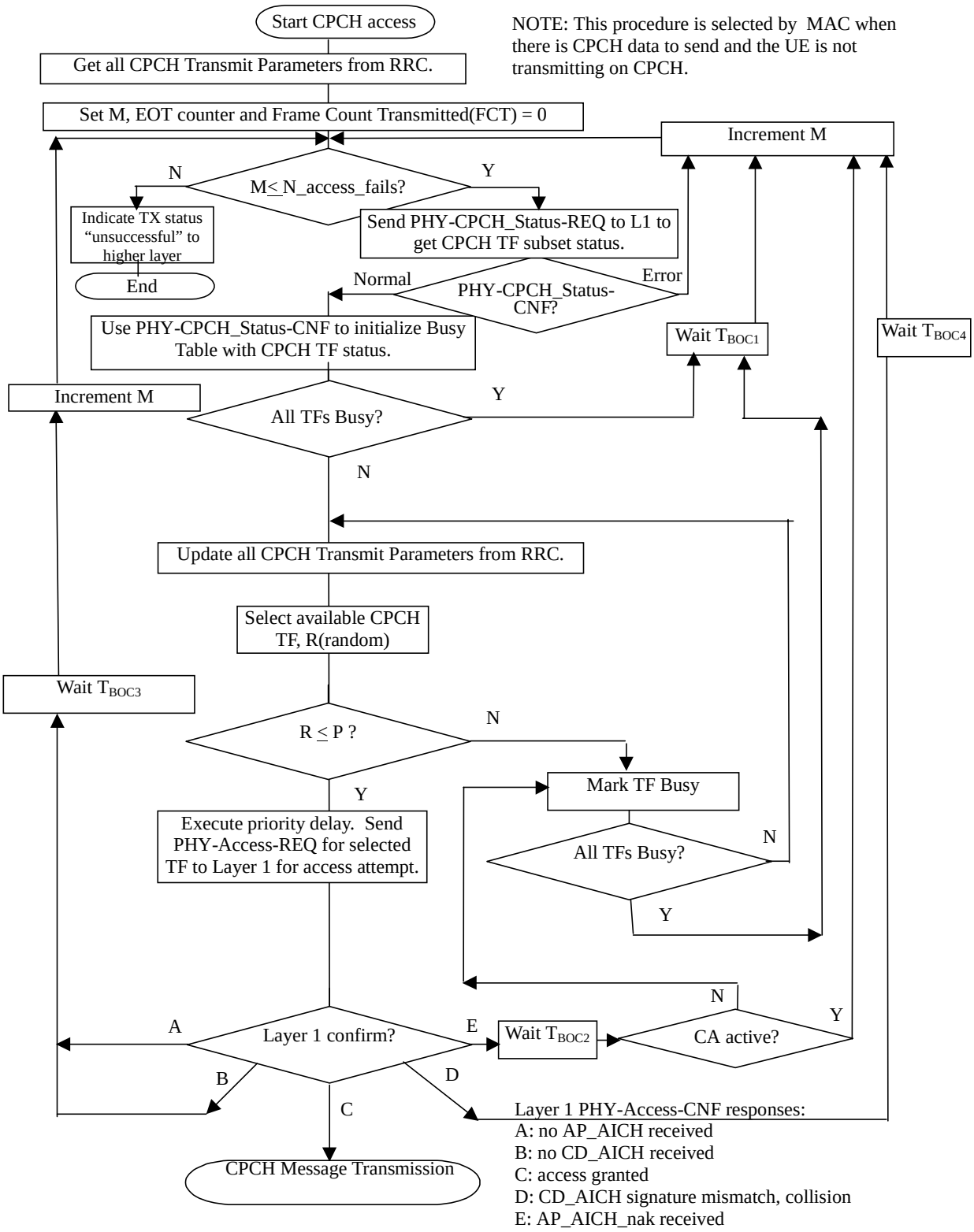

Figure 11.3.1: CPCH transmission control procedure for access (informative)

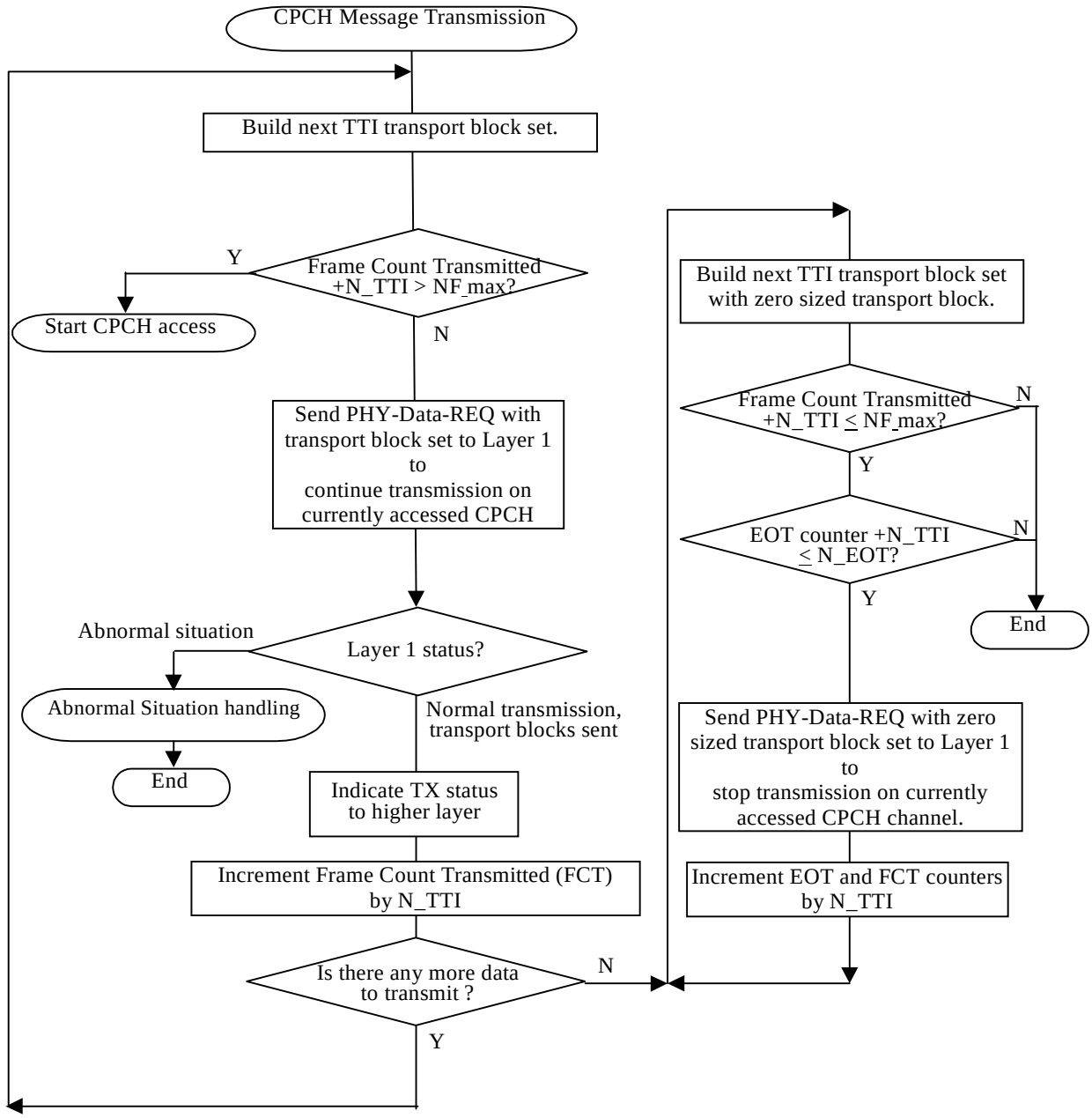

Figure 11.3.2: CPCH transmission control procedure for CPCH Message Transmission (informative)

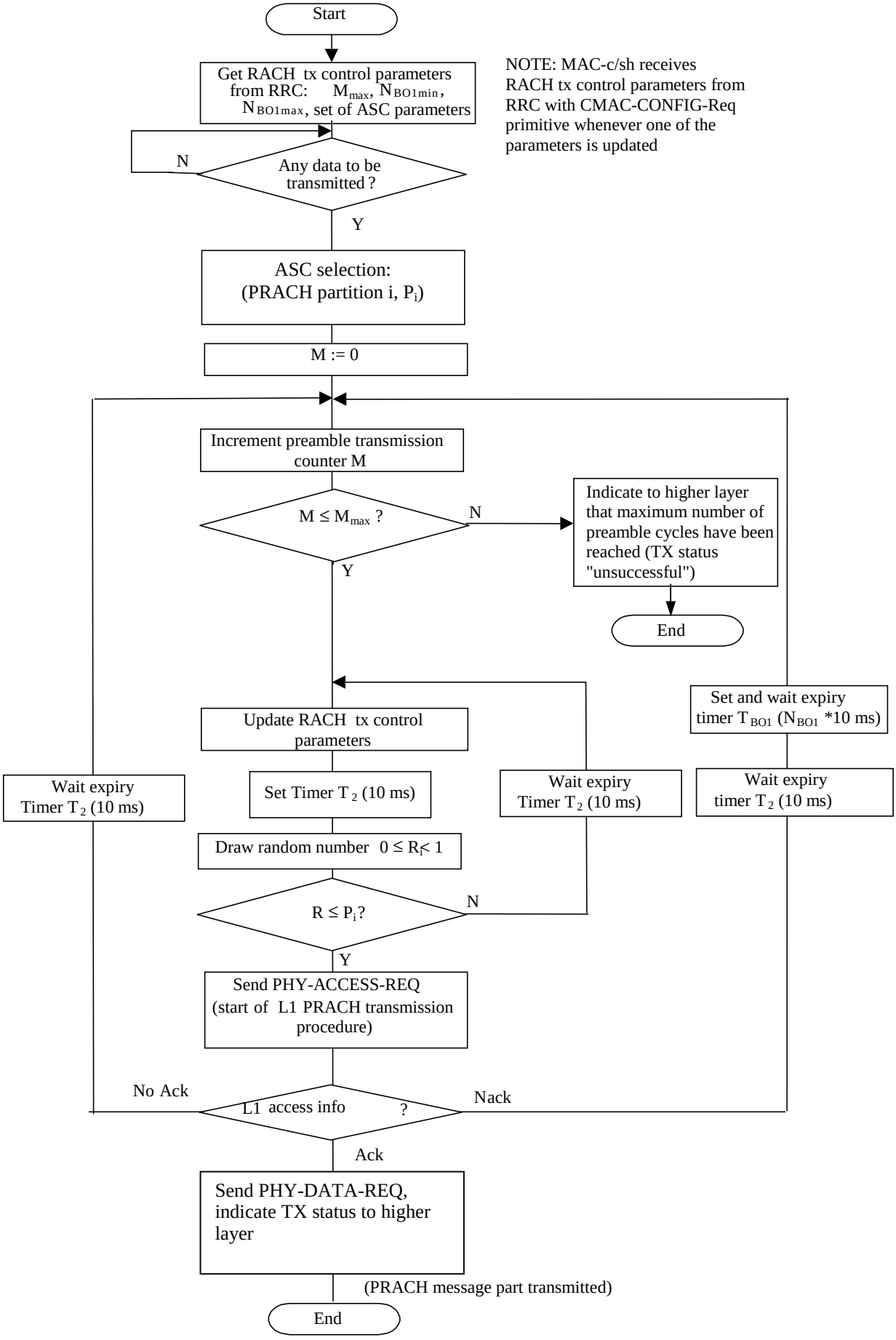

Figure 11.2.2.1: RACH transmission control procedure (UE side, informative)

3GPP TSG-RAN WG2 Meeting #25
Makuhari, Japan, 26-30 November 2001

Tdoc R2-012480

CR-Form-v4

CHANGE REQUEST

⌘ **25.321** **CR** **094** ⌘ rev **-** ⌘ Current version: **3.9.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Correction on Control of RACH Transmissions
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	26 November 01
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The first sentence in 11.2 could be understood as if only TTI=10ms and not TTI=20ms were considered for the control of RACH transmissions.
Summary of change:	⌘	The sentence is clarified. Isolated impact analysis: • The CR has isolated impact and should be seen as a clarification.
Consequences if not approved:	⌘	Specification less clear.

Clauses affected:	⌘	11.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.321 v4.2.0, CR 095
Other comments:	⌘			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

11.2 Control of RACH transmissions

The MAC sublayer is in charge of controlling the timing of RACH transmissions on transmission time interval level (~~i.e. on 10 ms radio frame level;~~ the timing on access slot level is controlled by L1). Note that retransmissions in case of erroneously received RACH message part are under control of higher layers, i.e. RLC, or RRC for CCCH (and SHCCH for TDD).

3GPP TSG-RAN WG2 Meeting #25
Makuhari, Japan, 26-30 November 2001

Tdoc R2-012645

CR-Form-v4

CHANGE REQUEST

⌘ **25.321 CR 095** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title:	⌘	Correction on Control of RACH Transmissions
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	26 November 01
Category:	⌘	**A**
Release:	⌘	REL-4

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C *(functional modification of feature)*
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Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The first sentence in 11.2 could be understood as if only TTI=10ms and not TTI=20ms were considered for the control of RACH transmissions.
Summary of change:	⌘	The sentence is clarified.
Consequences if not approved:	⌘	Specification less clear.

Clauses affected:	⌘	11.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.321 v3.9.0, CR 094
Other comments:	⌘			

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11.2 Control of RACH transmissions

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3GPP TSG-RAN WG2 Meeting #25
Makuhari, Japan, 26-30 November 2001

Tdoc R2-012646

CR-Form-v4

CHANGE REQUEST

⌘ **25.321 CR 096** ⌘ rev **r1** ⌘ Current version: **3.9.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Correction on Traffic Volume Control	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 26 November 01
Category: ⌘	**F**	***Release:*** ⌘ R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘
R2-012362 preseted in RAN2#24 highlighted some ambiguities regarding the Traffic Volume Measurement description in the MAC and the RRC specification. After discussions, the conclusion was that it is possible that the two trigger for TVM, i.e. Even Trigger or Periodical are 'active' simultaneously. The easiest for the UE is to treat the two reports independently and, in case of simultaneous trigger in one TTI, send a separate measurement report for every event. It was agreed that a clarification to the MAC specification would be useful to ensure that the figure in MAC would not be misunderstood.

Summary of change: ⌘
1. Clarifies that the two triggers for TVM can be active simultaneously.
2. Clarifies that Figure 11.1.1 is for information only and for the UE side.

Isolated impact analysis:
- The CR has isolated impact and should be seen as a clarification.

Consequences if not approved: ⌘
UE implementation might not consider the case of the 2 triggers being active simulataneously.

Clauses affected: ⌘ 11.1

Other specs affected: ⌘
☐ Other core specifications ⌘ 25.321 v4.2.0, CR 097
☐ Test specifications
☐ O&M Specifications

Other comments: ⌘

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

11.1 Traffic volume measurement for dynamic radio bearer control

Dynamic radio bearer control is performed in RRC, based on the traffic volume measurement reported by MAC. Traffic volume information is gathered and measured in MAC layer and the result is reported from MAC layer to RRC layer.

Traffic volume measurement procedure in MAC is shown in figure 11.1.1. MAC receives RLC PDUs together with BOs (Buffer Occupancies) from RLC entities, and may multiplex these RLC PDUs. If the reporting mode is Event Trigger, MAC compares for each TTI Transport Channel Traffic Volume (equivalent to total sum of BOs for logical channels mapped onto a transport channel) with the thresholds set by RRC. If the value is out of range, MAC reports measurement result (i.e. BO, Average of BO, and Variance of BO) of each RB to RRC. If the reporting mode is Periodical, MAC reports measurement result of each RB to RRC at the end of each Reporting Interval. The Reporting Interval is set by RRC. Thereby, RRC can be informed the traffic volume status of each logical and transport channel, and therefore can take proper action for new radio bearer configuration accordingly. The two reporting modes, Event Trigger and Periodical, are not mutually exclusive, i.e. MAC may be requested to simultaneously report on both modes.

RRC requests MAC measurement report with the primitive CMAC-Measure-REQ including following parameters.

Measurement information elements.

- Mode
  Indicates whether the report should be Periodical, or Event Trigger

- Reporting Quantity identifiers
  Indicates what should be reported to RRC layer
  For each RB, BO (optional), Average of BO (optional), or Variance of BO(optional)

- Time interval to take an average or a variance (applicable when Average or Variance is Reporting Quantity)
  Indicates time interval to take an average or a variance of BO
  The calculation of average and variance of BO shall be based on one sample of BO per 10ms during the time interval given in this information element. All samples taken in the time interval shall have equal weight in the calculation.

- Reporting Interval (applicable when mode is Periodical)
  Indicates the time interval of periodical report

- Upper and Lower Thresholds, TH_U and TH_L (applicable when mode is Event Trigger)

  - TH_U: Upper threshold value for each transport channel, used when Event ID = 4a

  - TH_L: Lower threshold value for each transport channel, used when Event ID = 4b

MAC receives RLC PDUs with the primitive MAC-Data-REQ including following parameters.

- Data (RLC PDU)

- Buffer Occupancy (BO)
  The parameter Buffer Occupancy (BO) indicates for each logical channel the amount of data in number of bytes that is available for transmission and retransmission in RLC layer. When MAC is connected to an AM RLC entity, control PDUs to be transmitted and RLC PDUs outside the RLC Tx window shall also be included in the BO. RLC PDUs that have been transmitted but not negatively acknowledged by the peer entity shall not be included in the BO.

MAC receives measurement information elements with the primitive CMAC-Measure-REQ that includes parameters such as Mode, Reporting Quantity identifiers, Time interval to take an average or a variance, Reporting Interval, and TH_U and TH_L for each transport channel. Whenever MAC receives RLC PDUs from different RLC entities, it is notified by RLC amount of data queued in RLC transmission and retransmission buffer. If the mode is Event Trigger, MAC compares Transport Channel Traffic Volume with threshold values passed by RRC, TH_U and TH_L. In case that the measured value is out of range, MAC reports measurement result of each RB to RRC. On the other hand, if the

mode is Periodical, MAC reports measurement result to RRC periodically. Measurement result can contain average and variance as well as amount of data for each RB as follows.

Measurement result.

- Mode
  Periodical, or Event Trigger

- Reporting Quantity
  For each RB, BO (optional), Average of BO (optional), and Variance of BO (optional)

- Event ID (applicable when mode is Event Trigger)
  Indicates overflow or underflow for each transport channel

  - Event 4a: Transport Channel Traffic Volume exceeds an absolute threshold

  - Event 4b: Transport Channel Traffic Volume becomes smaller than an absolute threshold

When RRC receives the measurement result of each RB, RRC shall convert the values BO, Average of BO, and Variance of BO to the quantisised values RLC Buffer Payload, Average of RLC Buffer Payload, and Variance of RLC Buffer Payload, respectively.

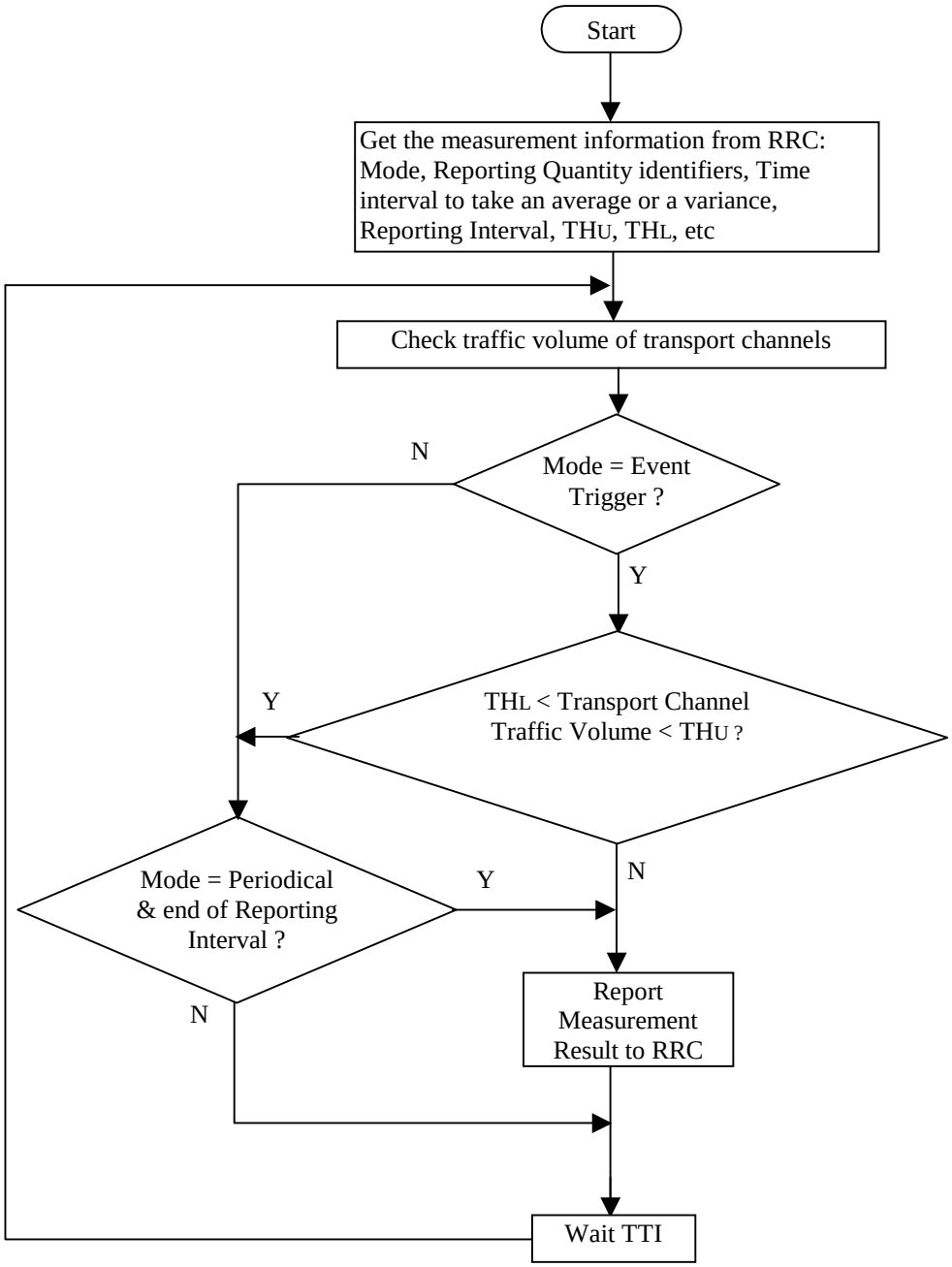

Figure 11.1.1: Traffic volume measurement/report procedure in MAC (UE side, informative)

3GPP TSG-RAN WG2 Meeting #25
Makuhari, Japan, 26-30 November 2001

Tdoc R2-012647

CR-Form-v4

CHANGE REQUEST

⌘ **25.321 CR 097** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title: ⌘	Correction on Traffic Volume Control	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 26 November 01
Category: ⌘	**A**	***Release:*** ⌘ REL-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change: ⌘	R2-012362 preseted in RAN2#24 highlighted some ambiguities regarding the Traffic Volume Measurement description in the MAC and the RRC specification. After discussions, the conclusion was that it is possible that the two trigger for TVM, i.e. Even Trigger or Periodical are 'active' simultaneously. The easiest for the UE is to treat the two reports independently and, in case of simultaneous trigger in one TTI, send a separate measurement report for every event. It was agreed that a clarification to the MAC specification would be useful to ensure that the figure in MAC would not be misunderstood.
Summary of change: ⌘	1. Clarifies that the two triggers for TVM can be active simultaneously. 2. Clarifies that Figure 11.1.1 is for information only and for the UE side.
Consequences if not approved: ⌘	UE implementation might not consider the case of the 2 triggers being active simulataneously.

Clauses affected: ⌘	11.1		
Other specs affected: ⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.321 v3.9.0, CR 096
Other comments: ⌘			

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Measurement information elements.

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- Reporting Interval (applicable when mode is Periodical)
  Indicates the time interval of periodical report

- Upper and Lower Thresholds, TH_U and TH_L (applicable when mode is Event Trigger)

  - TH_U: Upper threshold value for each transport channel, used when Event ID = 4a

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MAC receives measurement information elements with the primitive CMAC-Measure-REQ that includes parameters such as Mode, Reporting Quantity identifiers, Time interval to take an average or a variance, Reporting Interval, and TH_U and TH_L for each transport channel. Whenever MAC receives RLC PDUs from different RLC entities, it is notified by RLC amount of data queued in RLC transmission and retransmission buffer. If the mode is Event Trigger, MAC compares Transport Channel Traffic Volume with threshold values passed by RRC, TH_U and TH_L. In case that the measured value is out of range, MAC reports measurement result of each RB to RRC. On the other hand, if the

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Measurement result.

- Mode
  Periodical, or Event Trigger

- Reporting Quantity
  For each RB, BO (optional), Average of BO (optional), and Variance of BO (optional)

- Event ID (applicable when mode is Event Trigger)
  Indicates overflow or underflow for each transport channel

  - Event 4a: Transport Channel Traffic Volume exceeds an absolute threshold

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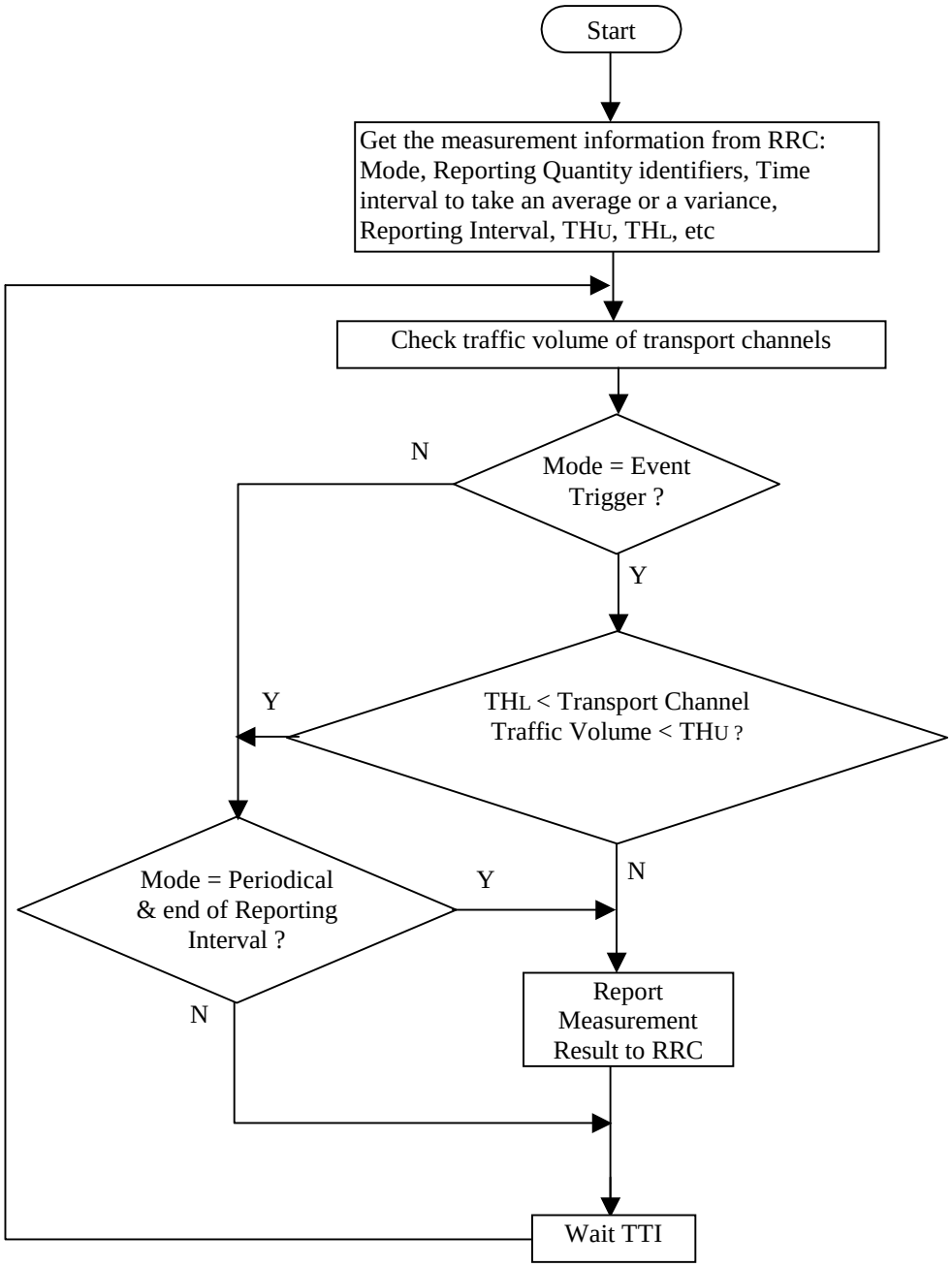

Figure 11.1.1: Traffic volume measurement/report procedure in MAC (UE side, informative)

3GPP TSG-RAN WG2 Meeting #25
Makuhari, Japan, 26th-30th November 2001

Tdoc R2-012509

CR-Form-v4

CHANGE REQUEST

⌘ **25.321 CR 098** ⌘ rev **-** ⌘ Current version: **3.9.0** ⌘

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Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title: ⌘	General correction on Access Service Class selection	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 15 Nov, 2001
Category: ⌘	**F**	***Release:*** ⌘ R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘	Clarify that the NumASC is between 0 and 7, and that the maximum number of ASCs is therefore equal to 8 (but not NumASC+1).
Summary of change: ⌘	In subclause 11.2.1, the phase “the maximum number of ASCs is NumASC+1 = 8” is corrected to “the maximum number of ASCs is 8”.
Consequences if not approved: ⌘	Inconsistency in this specification **Isolated impact analysis:** **The CR has no impact to previous version** The same clarification is also needed in subclause 8.5.12 of TS25.331 (see Tdoc R2-012510). Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected: ⌘	11.2.1		
Other specs affected: ⌘	**X** Other core specifications	⌘	TS25.331 25.321 v4.2.0, CR 099
	☐ Test specifications		
	☐ O&M Specifications		
Other comments: ⌘			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

11.2.1 Access Service Class selection

The physical RACH resources (i.e. access slots and preamble signatures for FDD, timeslot and channelisation code for TDD) may be divided between different Access Service Classes in order to provide different priorities of RACH usage. It is possible for more than one ASC or for all ASCs to be assigned to the same access slot/signature space.

Access Service Classes are numbered in the range $0 \leq i \leq \text{NumASC} \leq 7$ (i.e. the maximum number of ASCs is ~~NumASC+1 =~~ 8). An ASC is defined by an identifier i that defines a certain partition of the PRACH resources and an associated persistence value P_i. A set of ASC parameters consists of NumASC+1 such parameters (i, P_i), i = 0, …, NumASC. The PRACH partitions and the persistence values P_i are derived by the RRC protocol from system information (see [7]). The set of ASC parameters is provided to MAC with the CMAC-Config-REQ primitive. The ASC enumeration is such that it corresponds to the order of priority (ASC 0 = highest priority, ASC 7 = lowest priority). ASC 0 shall be used in case of Emergency Call or for reasons with equivalent priority.

At radio bearer setup/reconfiguration each involved logical channel is assigned a MAC Logical channel Priority (MLP) in the range 1,…,8. When the MAC sublayer is configured for RACH transmission in the UE, these MLP levels shall be employed for ASC selection on MAC.

The following ASC selection scheme shall be applied, where NumASC is the highest available ASC number and MinMLP the highest logical channel priority assigned to one logical channel:

- in case all TBs in the TB set have the same MLP, select ASC = min(NumASC, MLP);
- in case TBs in a TB set have different priority, determine the highest priority level MinMLP and select ASC = min(NumASC, MinMLP).

When an RRC CONNECTION REQUEST message is sent RRC determines ASC by means of the access class [7]. The ASC to be used in these circumstances is signalled to MAC by means of the CMAC-CONFIG-REQ message.

If MAC has knowledge of a U-RNTI then the ASC is determined in the MAC entity. If no U-RNTI has been indicated to MAC then MAC will use the ASC indicated in the CMAC-CONFIG-REQ primitive.

3GPP TSG-RAN WG2 Meeting #25
Makuhari, Japan, 26th-30th November 2001

Tdoc R2-012648

CR-Form-v4

CHANGE REQUEST

⌘ **25.321 CR 099** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title: ⌘	General correction on Access Service Class selection	
Source: ⌘	TSG-RAN WG2	
Work item code: ⌘	TEI	***Date:*** ⌘ 28 Nov, 2001
Category: ⌘	**A**	***Release:*** ⌘ REL-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘	Clarify that the NumASC is between 0 and 7, and that the maximum number of ASCs is therefore equal to 8 (but not NumASC+1).
Summary of change: ⌘	In subclause 11.2.1, the phase "the maximum number of ASCs is NumASC+1 = 8" is corrected to "the maximum number of ASCs is 8".
Consequences if not approved: ⌘	Inconsistency in this specification **Isolated impact analysis:** **The CR has no impact to previous version** The same clarification is also needed in subclause 8.5.12 of TS25.331 (see Tdoc R2-012510). Would not affect implementations behaving like indicated in the CR, would affect implementations supporting the corrected functionality otherwise.

Clauses affected: ⌘	11.2.1		
Other specs affected: ⌘	**X** Other core specifications	⌘	TS25.331 25.321 v3.9.0, CR 098
	☐ Test specifications		
	☐ O&M Specifications		
Other comments: ⌘			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

11.2.1 Access Service Class selection

The physical RACH resources (i.e. access slots and preamble signatures for FDD, timeslot and channelisation code for TDD) may be divided between different Access Service Classes in order to provide different priorities of RACH usage. It is possible for more than one ASC or for all ASCs to be assigned to the same access slot/signature space.

Access Service Classes are numbered in the range $0 \leq i \leq \text{NumASC} \leq 7$ (i.e. the maximum number of ASCs is ~~NumASC+1 =~~ 8). An ASC is defined by an identifier i that defines a certain partition of the PRACH resources and an associated persistence value P_i. A set of ASC parameters consists of NumASC+1 such parameters (i, P_i), i = 0, …, NumASC. The PRACH partitions and the persistence values P_i are derived by the RRC protocol from system information (see [7]). The set of ASC parameters is provided to MAC with the CMAC-Config-REQ primitive. The ASC enumeration is such that it corresponds to the order of priority (ASC 0 = highest priority, ASC 7 = lowest priority). ASC 0 shall be used in case of Emergency Call or for reasons with equivalent priority.

At radio bearer setup/reconfiguration each involved logical channel is assigned a MAC Logical channel Priority (MLP) in the range 1,…,8. When the MAC sublayer is configured for RACH transmission in the UE, these MLP levels shall be employed for ASC selection on MAC.

The following ASC selection scheme shall be applied, where NumASC is the highest available ASC number and MinMLP the highest logical channel priority assigned to one logical channel:

- in case all TBs in the TB set have the same MLP, select ASC = min(NumASC, MLP);
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When an RRC CONNECTION REQUEST message is sent RRC determines ASC by means of the access class [7]. The ASC to be used in these circumstances is signalled to MAC by means of the CMAC-CONFIG-REQ message.

If MAC has knowledge of a U-RNTI then the ASC is determined in the MAC entity. If no U-RNTI has been indicated to MAC then MAC will use the ASC indicated in the CMAC-CONFIG-REQ primitive.

3GPP TSG- RAN WG2 Meeting #25
Makuhari, Japan, 26-30 November 2001

Tdoc R2-012664

CR-Form-v5

CHANGE REQUEST

⌘ **25.321 CR 100** ⌘ **rev -** ⌘ Current version: **3.9.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network **X** Core Network ☐

Title:	⌘	TFC selection in compressed mode
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	29/11/2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	Clarify the TFC selection algorithm in compressed mode.
Summary of change:	⌘	It is clarified that TFCs can be removed arbitrarily from the set of valid TFCs when compressed transmissions exist within the longest configured TTI. Isolated impact analysis: This change affects the TFC Selection function during compressed transmissions. UEs complying with older versions of the specification would still comply with the new specification. The RRM of UTRAN running older versions of the spec may be affected when communicating with UEs running a version of the specification with this change.
Consequences if not approved:	⌘	

Clauses affected:	⌘	11.4		
Other specs affected:	⌘	**X** Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	25.321 v4.2.0, CR 101
Other comments:	⌘			

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

11.4 Transport format combination selection in UE

RRC can control the scheduling of uplink data by giving each logical channel a priority between 1 and 8, where 1 is the highest priority and 8 the lowest. TFC selection in the UE shall be done in accordance with the priorities indicated by RRC. Logical channels have absolute priority, i.e. the UE shall maximise the transmission of higher priority data.

The UE shall continuously monitor the state for each TFC based on its required transmit power versus the maximum UE transmit power. A given TFC can be in any of the following states:

- Supported state;
- Excess-power state;
- Blocked state.

The following diagram illustrates the state transitions for the state of a given TFC:

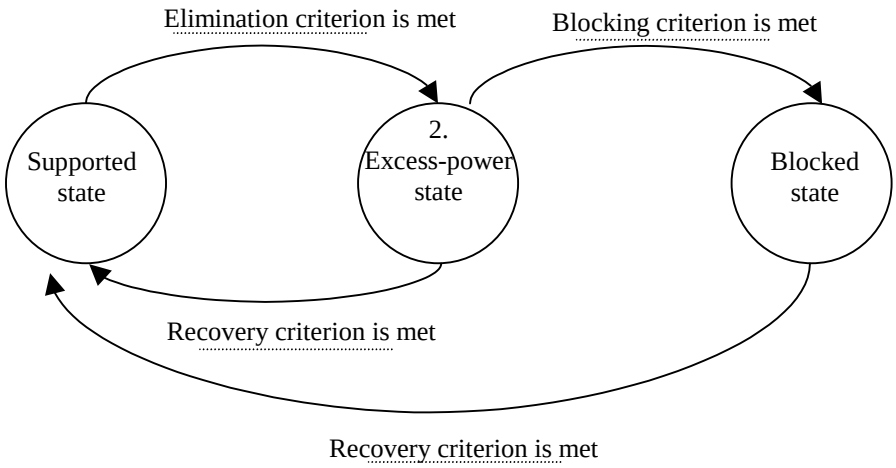

Figure 11.4.1: State transitions for the state of a given TFC

The state transition criteria and the associated requirements are described in [12]. The UE shall consider that the Blocking criterion is never met for TFCs included in the minimum set of TFCs (see [7]).

Every time the set of supported TFCs changes, the available bitrate shall be indicated to upper layers for each logical channel in order to facilitate the adaptation of codec data rates when codecs supporting variable-rate operation are used. The details of the computation of the available bitrate and the interaction with the application layer are not further specified.

Before selecting a TFC, i.e. at every boundary of the shortest TTI, the set of valid TFCs shall be established. All TFCs in the set of valid TFCs shall:

1. belong to the TFCS.
2. not be in the Blocked state.
3. be compatible with the RLC configuration.
4. not require RLC to produce padding PDUs (see [6] for definition).
5. not carry more bits than can be transmitted in a TTI (e.g. when compressed mode by higher layer scheduling is used and the presence of compressed frames reduces the number of bits that can be transmitted in a TTI using the Minimum SF configured ~~is reduced due to compressed frames when compressed mode by higher layer scheduling is used~~).

~~Additionally, t~~The UE may remove from the set of valid TFCs, TFCs in Excess-power state in order to maintain the quality of service for sensitive applications (e.g. speech). Additionally, if compressed frames are present within the longest configured TTI to which the next transmission belongs, the UE may remove TFCs from the set of valid TFCs in order to account for the higher power requirements.

If the TFCS selected by UTRAN does not follow the guidelines specified in [7] the UE may ignore constraint number 4 mentioned above in determining the set of valid TFCs.

The chosen TFC shall be selected from within the set of valid TFCs and shall satisfy the following criteria in the order in which they are listed below:

1. No other TFC shall allow the transmission of more highest priority data than the chosen TFC.
2. No other TFC shall allow the transmission of more data from the next lower priority logical channels. Apply this criterion recursively for the remaining priority levels.
3. No other TFC shall have a lower bit rate than the chosen TFC.

The above rules for TFC selection in the UE shall apply to DCH, and the same rules shall apply for TF selection on RACH and CPCH.

3GPP TSG- RAN WG2 Meeting #25
Makuhari, Japan, 26-30 November 2001

Tdoc R2-012757

CR-Form-v5

CHANGE REQUEST

⌘ **25.321** **CR** **101** ⌘ **rev** **-** ⌘ Current version: **4.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [ ] ME/UE [X] Radio Access Network [X] Core Network [ ]

Title:	⌘	TFC selection in compressed mode
Source:	⌘	TSG-RAN WG2
Work item code:	⌘	TEI
Date:	⌘	30/11/2001
Category:	⌘	**A**
Release:	⌘	R99

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Reason for change:	⌘	Clarify the TFC selection algorithm in compressed mode.
Summary of change:	⌘	It is clarified that TFCs can be removed arbitrarily from the set of valid TFCs when compressed transmissions exist within the longest configured TTI.
Consequences if not approved:	⌘	Highly suboptimal behavior during compressed transmissions.

Clauses affected:	⌘	11.4		
Other specs affected:	⌘	[X] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	25.321 v3.9.0, CR 100
Other comments:	⌘			

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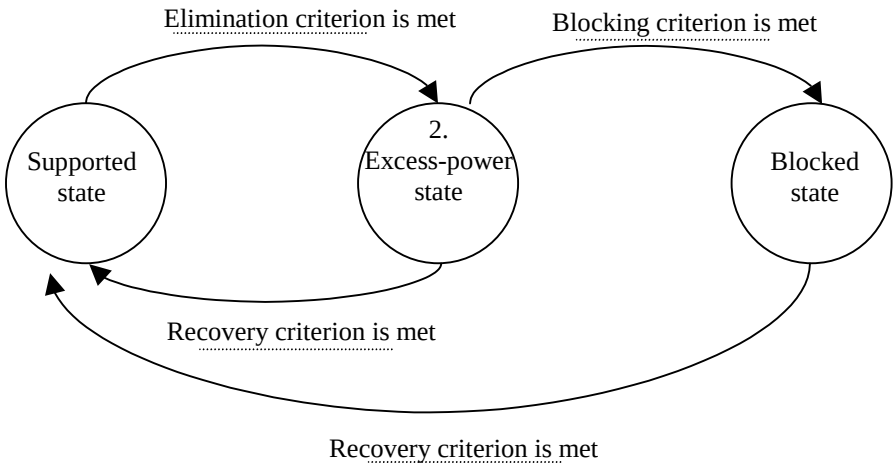

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